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 1 [Performance optimization of wireless local area networks through VLSI data compression](#)

Ads 1

 Bongjin Jung, Wayne P. Burleson  
 January 1998 *Wireless Networks*, Volume 4 Issue 1  
 Publisher: Kluwer Academic Publishers

Full text available: pdf(664.69 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 0, Downloads (12 Months): 43, Citation Count: 1

In contrast to wireline communication, the physical bandwidth of RF wireless communication systems is relatively limited and is unlikely to grow significantly in the future. Hence it is advantageous to increase the effective bandwidth of communication ...

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 2 [Compression techniques for fast external sorting](#)

 John Yiannis, Justin Zobel  
 April 2007 *The VLDB Journal — The International Journal on Very Large Data Bases*,  
 Volume 16 Issue 2  
 Publisher: Springer-Verlag New York, Inc.

 Full text available: pdf(432.12 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 17, Downloads (12 Months): 203, Citation Count: 0

External sorting of large files of records involves use of disk space to store temporary files, processing time for sorting, and transfer time between CPU, cache, memory, and disk. Compression can reduce disk and transfer costs, and, in the case of external ...

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Keyw ords: External sorting, Query evaluation, Semi-static compression, Sorting

 3 [Asymptotic Behavior of the Height in a Digital Search Tree and the Longest Phrase of the Lempel-Ziv Scheme](#)

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 Charles Knesl, Wojciech Szpankowski  
 May 2000 *SIAM Journal on Computing*, Volume 30 Issue 3  
 Publisher: Society for Industrial and Applied Mathematics

 Full text available: [Publisher Site](#)

 Additional Information: [full citation](#), [abstract](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 3

We study the height of a *digital search tree* (DST) built from  $n$  random strings generated by an unbiased memoryless source (i.e., all symbols are equally likely). We shall argue that the height of such a tree is equivalent to the length ...

**Keywords:** Laplace transform, Lempel--Ziv algorithm, WKB method, digital search trees, elliptic theta function, height distribution, linearization, longest phrase distribution, matched asymptotics, saddle point method

#### 4 [Lempel-Ziv compression of highly structured documents: Research Articles](#)

Joaquín Adiego, Gonzalo Navarro, Pablo de la Fuente

February 2007 *Journal of the American Society for Information Science and Technology*, Volume 58 Issue 4

Publisher: John Wiley & Sons, Inc.

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 1

The authors describe Lempel-Ziv to Compress Structure (LZCS), a novel Lempel-Ziv approach suitable for compressing structured documents. LZCS takes advantage of repeated substructures that may appear in the documents, by replacing them with a backward ...

#### 5 [Lempel-Ziv Compression of Structured Text](#)

Joaquín Adiego, Gonzalo Navarro, Pablo de la Fuente

March 2004 DCC '04: Proceedings of the Conference on Data Compression

Publisher: IEEE Computer Society

Full text available:  [Publisher Site](#) Additional Information: [full citation](#), [abstract](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 3

We describe a novel Lempel-Ziv approach suitable for compressing structured documents, called LZCS, which takes advantage of redundant information that can appear in the structure. The main idea is that frequently repeated subtrees may exist and these can ...

**Keywords:** Ziv-Lempel, XML Data, Text Compression

#### 6 [Study on the Pseudorandomness and Complexity of Chaotic Binary Sequences](#)

Niansheng Liu, Ming Qi Zheng, Donghui Guo

November 2007 ICCIT '07: Proceedings of the 2007 International Conference on Convergence Information Technology (ICCIT 2007) - Volume 00, Volume 00

Publisher: IEEE Computer Society

Full text available:  [Publisher Site](#) Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 0

The pseudorandomness and complexity of binary sequences generated by typical Lorenz chaotic system and chebyshev map are analyzed and discussed in this paper. The binary sequences are obtained from the chaotic real-valued sequences generated by chaotic ...

## 7 [Representation and coding of light field data](#)

Dan Lelescu, Frank Bossen

July 2004 *Graphical Models*, Volume 66 Issue 4

Publisher: Academic Press Professional, Inc.

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 0

Light Fields and Lumigraphs represent 4D parameterizations of the plenoptic function. Given the large amount of data and the nature of such representations, there are two main requirements for the effective processing of light fields. The light field ...


## 8 [Strong Lower Bounds for Approximating Distribution Support Size and the Distinct Elements Problem](#)

Sofya Raskhodnikova, Dana Ron, Amir Shpilka, Adam Smith

October 2007 FOCS '07: Proceedings of the 48th Annual IEEE Symposium on

Foundations of Computer Science (FOCS'07) - Volume 00, Volume 00

Publisher: IEEE Computer Society

Full text available:  [Publisher Site](#) Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 0

We consider the problem of approximating the support size of a distribution from a small number of samples, when each element in the distribution appears with probability at least  $\frac{1}{n}$ . This problem is closely related to the problem of approximating ...


## 9 [TestU01: A C library for empirical testing of random number generators](#)



Pierre L'Ecuyer, Richard Simard

August 2007 ACM Transactions on Mathematical Software (TOMS), Volume 33 Issue 4

Publisher: ACM

Full text available:  [pdf\(601.63 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 23, Downloads (12 Months): 361, Citation Count: 0

We introduce *TestU01*, a software library implemented in the ANSI C language, and offering a collection of utilities for the empirical statistical testing of uniform random number generators (RNGs). It provides general implementations of the classical ...


Keywords: Statistical software, random number generators, random number tests, statistical test

## 10 [SARC: sequential prefetching in adaptive replacement cache](#)

Binny S. Gill, Dharmendra S. Modha

April 2005 ATEC '05: Proceedings of the annual conference on USENIX Annual Technical Conference

Publisher: USENIX Association

Full text available:  [pdf\(352.13 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 1, Downloads (12 Months): 11, Citation Count: 4

Sequentiality of reference is an ubiquitous access pattern dating back at least to Multics. Sequential workloads lend themselves to highly accurate prediction and prefetching. In spite of the simplicity of the workload, design and analysis of a good ...

11 [Entropy-based bounds for online algorithms](#)

Gopal Pandurangan, Eli Upfal

February 2007 ACM Transactions on Algorithms (TALG), Volume 3 Issue 1

Publisher: ACM

Full text available: [pdf\(146.02 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 7, Downloads (12 Months): 143, Citation Count: 0

We focus in this work on an aspect of online computation that is not addressed by standard competitive analysis, namely, identifying request sequences for which nontrivial online algorithms are useful versus request sequences for which all algorithms ...

Keywords: Online algorithms, caching, entropy, list accessing, performance bounds, prefetching, stochastic process

12 [Optimal prefetching via data compression](#)

Jeffrey Scott Vitter, P. Krishnan

September 1996 Journal of the ACM (JACM), Volume 43 Issue 5

Publisher: ACM

Full text available: [pdf\(564.53 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#), [review](#)

Bibliometrics: Downloads (6 Weeks): 9, Downloads (12 Months): 74, Citation Count: 22

Caching and prefetching are important mechanisms for speeding up access time to data on secondary storage. Recent work in competitive online algorithms has uncovered several promising new algorithms for caching. In this paper, we apply a form of the ...

Keywords: Markov source, caching, competitive analysis, data compression, databases, fault rate, hypertext, prediction, prefetching, secondary stage, universal prefetcher

13 [HAVEGE: A user-level software heuristic for generating empirically strong random numbers](#)

André Seznec, Nicolas Sendrier

October 2003 ACM Transactions on Modeling and Computer Simulation (TOMACS), Volume 13 Issue 4

Publisher: ACM

Full text available: [pdf\(122.26 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 6, Downloads (12 Months): 52, Citation Count: 0

Random numbers with high cryptographic quality are needed to enhance the security of cryptography applications. Software heuristics for generating empirically strong random number sequences rely on entropy gathering by measuring unpredictable external ...

Keywords: Cryptography, hardware clock counters, random number generation, superscalar processor

14 [Definability and Compression](#)

Foto Afrati, Hans Leiß, Michel de Rougemont

January 2003 Fundamenta Informaticae, Volume 56 Issue 1-2

Publisher: IOS Press

Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 0

A compression algorithm takes a finite structure of a class  $K$  as input and produces a finite structure of a different class  $K'$  as output. Given a property  $P$  on the class  $K$  defined in a logic  $\mathcal{L}$ , we study the definability of property  $P$  on the class  $K'$  ...


Keywords: Lempel-Ziv-78, Logic, definability, string compression

# 15 [The case for compressed caching in virtual memory systems](#)

Paul R. Wilson, Scott F. Kaplan, Yannis Smaragdakis

June 1999 ATEC '99: Proceedings of the annual conference on USENIX Annual Technical Conference

Publisher: USENIX Association

Full text available:  [pdf\(975.00 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 2, Downloads (12 Months): 9, Citation Count: 3

Compressed caching uses part of the available RAM to hold pages in compressed form, effectively adding a new level to the virtual memory hierarchy. This level attempts to bridge the huge performance gap between normal (uncompressed) RAM and disk. Unfortunately, ...

# 16 [Using structural contexts to compress semistructured text collections](#)

Joaquín Adiego, Gonzalo Navarro, Pablo de la Fuente

May 2007 Information Processing and Management: an International Journal, Volume 43 Issue 3

Publisher: Pergamon Press, Inc.

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 0

We describe a compression model for semistructured documents, called Structural Contexts Model (SCM), which takes advantage of the context information usually implicit in the structure of the text. The idea is to use a separate model to compress the ...

Keywords: Compressed text databases, Semistructured documents, Text compression

# 17 [An embedded true random number generator for FPGAs](#)



Paul Kohlbrenner, Kris Gaj

February 2004 FPGA '04: Proceedings of the 2004 ACM/SIGDA 12th international symposium on Field programmable gate arrays

Publisher: ACM

Full text available:  [pdf\(216.61 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 30, Downloads (12 Months): 356, Citation Count: 0

Field Programmable Gate Arrays (FPGAs) are an increasingly popular choice of platform for the implementation of cryptographic systems. Until recently, designers using FPGAs had less than optimal choices for a source of truly random bits. In this paper ...

Keywords: FPGA, RNG, TRNG, cryptographic, random numbers

18 [Compressed full-text indexes](#)

Gonzalo Navarro, Veli Mäkinen

April 2007 ACM Computing Surveys (CSUR), Volume 39 Issue 1

Publisher: ACM

Full text available: pdf(1.09 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 54, Downloads (12 Months): 1317, Citation Count: 1

Full-text indexes provide fast substring search over large text collections. A serious problem of these indexes has traditionally been their space consumption. A recent trend is to develop indexes that exploit the compressibility of the text, so that ...

Keywords: Text indexing, entropy, text compression

19 [Estimating the Entropy Rate of Spike Trains via Lempel-Ziv Complexity](#)

José M. Amigó, Janusz M. Szczepański, Elek M. Wajnryb, Maria V. Sanchez-vives

April 2004 Neural Computation, Volume 16 Issue 4

Publisher: MIT Press

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 2

Normalized Lempel-Ziv complexity, which measures the generation rate of new patterns along a digital sequence, is closely related to such important source properties as entropy and compression ratio, but, in contrast to these, it is a property of individual ...

20 [Analytic combinatorics: a calculus of discrete structures](#)

Philippe Flajolet

January 2007 SODA '07: Proceedings of the eighteenth annual ACM-SIAM symposium on Discrete algorithms

Publisher: Society for Industrial and Applied Mathematics

Full text available: pdf(1.62 MB) Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): 6, Downloads (12 Months): 116, Citation Count: 0

The efficiency of many discrete algorithms crucially depends on quantifying properties of large structured combinatorial configurations. We survey methods of *analytic combinatorics* that are simply based on the idea of associating numbers to atomic ...

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